REMARKS

Applicant has amended independent claims 1, 13 and 33. The remaining independent claims 17, 21, 24 and 29 are not currently amended.

Applicant has amended dependent claim 2. The remaining dependent claims are not currently amended.

Applicant has shortened the Abstract as suggested by the Examiner.

The Examiner continued her rejection of all of claims 1-38 as obvious over the combination of Hendrickson U.S. Patent No. 5,930,784 in view of Becker U.S. Patent No. 6,034,697. Applicant respectfully asserts that each of the present claims patentably distinguish over the cited references taken singly or in combination.

Independent method claims 1 and 13 have been amended to clarify that the first and second generation methods are different methods for generating different visualizations from the same data records. Each method recites a step of selecting, or enabling a user to select, from a first generation method and a second generation method, wherein the resulting concept landscape visualization generated from the same data records differs based upon the selected method.

Hendrickson fails to teach or suggest different algorithms (methods) for calculating surface values of a concept landscape visualization. Instead, Hendrickson discusses calculating different maps for different collections of documents — based upon time in the example noted by the Examiner. Thus, in Hendrickson the different maps are based on different records and thus fail to teach or suggest the subject matter of Applicant's independent claims 1 and 13.

Furthermore, the skilled person cannot simply extend the teachings of Hendrickson to produce the subject matter of Applicant's claims 1 and 13. Hendrickson

only discusses scaling of the eigenvectors, not using different algorithms. There is no teaching or suggestion in the cited references to extend Hendrickson to different algorithms and it would not be obvious to do so since there is no hint given as to why or to what other algorithms might be used.

In contrast, Applicant describes processes and systems consistent with the present invention which enable a user to choose from one or more algorithms or methods for creating the landscape. (See Applicant's specification beginning on page 13, line 17.) One of these algorithms may be a dominant theme algorithm indicated by option 516 in Fig. 5. The dominant theme algorithm attempts to find the one dominant theme at each grid cell, by tracking the number of records that contain each term at each cell and determining which theme term occurs in the maximum number of records.

Another useful algorithm is called an aggregate theme algorithm. (See Applicant's specification beginning on page 14, line 7.) Using this algorithm, all candidate terms present in all records at each grid cell contribute to the surface height at that cell, in proportion to their frequency of occurrence. Applicant notes that in each of the algorithms, other types of attributes can be used instead of or in addition to single word features. Still further, other algorithms can be used to compute the height value of each grid in the landscape view. (Applicant's specification at page 14, lines 10-14.)

Thus, Applicant's method which enables a selection of different algorithms to generate a concept landscape visualization enables a user to create meaning from the landscape, in other words visual clues in the landscape that indicate important aspects of the record set based on the theme terms. This is in contrast to prior landscape views which may simply comprise redundant encoding of a document density overlaid on a

two-dimensional proximity map (see Applicant's specification at page 2, lines 6-10). Such landscape views fail to create meaning or present valuable visual clues as can be accomplished with Applicant's claimed concept landscape visualizations which depend on the selected generation method.

The secondary reference Becker fails to cure the deficiencies of Hendrickson. As noted, Becker describes an interpolation process which is performed over pre-process bins of scattered data points, and in which an interpolated dependent attribute can be mapped to color in a visualized scatter plot. The plot appears as rendered splats corresponding to bin positions of interpolated bins, where each splat has an opacity that is a function of the interpolated weight of data points in the corresponding bin.

There is no basis or suggestion for combining Becker's interpolated scatter plots with Hendrickson, Furthermore, even if combined, the combination fails to teach or suggest Applicant's claimed invention. Becker fails to teach or suggest Applicant's claimed step of providing different methods for generating concept landscape visualizations corresponding to vector representations of data records, wherein the selected first and second methods generate different visualizations from the same data records. Applicant's claimed different methods each calculate different surface values of the concept landscape visualization.

As described in Applicant's specification, for example in the embodiment described on pages 11-13, theme terms and record properties are established for a selected method, on which basis the computation of the grid of surface values is made for the resulting concept landscape visualization. Neither the primary nor the secondary

reference, taken singly or in combination, teach or suggest this use of different surface calculation algorithms.

Furthermore, with respect to claims 7-11, the Examiner asserts that Hendrickson refers to two types of maps. However, while Hendrickson does teach that there can be variability in a landscape representation, this is based on the choice of the underlying objects, not on the method of how the map is calculated from those objects. With regard to Hendrickson at column 5 line 65 to column 6 line 17, relied on by the Examiner, Hendrickson describes two types of altered maps: one is a selection of a specific region of a map (a zoomed-in perspective), while the other is a use of only portions of the underlying data (e.g., such as records from a particular time period). These approaches do not provide the claimed different methods for calculating surface values for the same records in the same geometric space.

Nor do the cited references teach or suggest the subject matter of Applicant's independent claims 21, 24 and 29. As described in the specification on page 4, processes and systems consistent with another aspect of Applicant's invention enable a user to choose to generate a second surface map representation based on a replacement term that is substituted for two or more selected terms that were used to generate an original surface map. The replacement term is considered to occur at all data record locations where the selected term occurred and the second surface map is generated based on the occurrence of the replacement term at the locations. By using this aspect of the invention, a user can identify terms that are different in form but are equivalent, such as synonyms, and cause those terms to be represented by a single replacement term. This aspect of the invention enables terms that were not considered

equivalent during generation of the original surface map to be considered as equivalent terms for the generation of a second surface map.

In this regard, independent claim 21 recites generating a first concept landscape visualization of the data records corresponding to the significance of the terms in the data records, enabling the user to define at least two of said terms as equivalent terms, and generating a second concept landscape visualization of the data records based on the significance of the defined equivalent terms.

Independent claim 24 recites receiving a first substitute term to be substituted for a first set of original terms of the data records, in generating a concept landscape visualization based on the first substitute term occurring at the data record locations of the first set of original terms.

Independent claim 29 recites generating a first concept landscape visualization of the data records corresponding to the significance of the terms in the data records, receiving a substitute term to be substituted for two or more selected terms of the data records, and generating a second concept landscape visualization based on the substitute term occurring at the data record locations of the selected terms.

There is nothing in Hendrickson that teaches whether or how one could apply substitute terms (e.g., synonyms) of surface values of a concept landscape visualization to effect the appearance of the landscape. Becker does not solve the problem because Becker's interpolation of discreet variables does not teach or suggest Applicant's claimed substitution of terms which involves a recalculation of the surface values of the concept landscape visualization, based on the substitute terms. Thus, a skilled person

would have to achieve a method to overcome this problem before the combination of Becker and Hendrickson could be applied.

With regard to independent claim 17, Applicant recites a method of associating and displaying labels in connection with selected peaks of a concept landscape visualization, wherein a label represents a significant term of the data records associated with the selected peak. Again, this method enables a user to, for example, select labels which are reflective of the algorithms used to generate the concept landscape visualization, wherein the labels specify dominant theme terms. For example, as described in Applicant's specification beginning at page 15, line 9, a peak label screen 700 is illustrated in Fig. 7 wherein the presentation of the landscape surface is enhanced by the addition of label 720 specifying the dominant theme terms. These labels may reflect the reason for the peak (surface height) depending upon the algorithm used to generate the landscape visualization.

With regard to independent claim 33, Applicant recites a method of receiving a user command to display information associated with a certain region of the visualization, and in response retrieving terms associated with the region and a numerical value associated with each term, where the value associated with each retrieved term represents the proportion of the entire region that the retrieved term represents. A chart is generated that displays the names of retrieved terms and associates the displayed terms with the segment of the chart that represents the displayed term, wherein the size of each segment of the chart is proportional to the terms representation in the region. For example, Fig. 11 illustrates a stacked bar chart 1102 that shows the visualization of all theme terms associated with a selected peak or

region 1108 in Fig. 11. The bar chart may be actuated by user interaction or may be displayed automatically for cells meeting certain criteria related to the attributes associated with the selected peak or region. Invocation of the bar chart function retrieves associated terms 1114 and percentage values 1116 that represent the proportion of the entire peak or region that the term represents. As shown, the bar chart 1102 can display the term name in close proximity to a segment or region of the bar chart that represents the term, where the length of the segment of the bar chart relative to the entire length of the bar chart can be proportional to the terms representation in the entire peak or region. Thus, the peak height, which would depend on the algorithm used to generate the concept landscape visualization, can be associated with the retrieved terms and associated numerical values of such terms in the displayed chart.

Neither Hendrickson nor Becker address these aspects recited in independent claims 17 and 33.

Applicant respectfully requests that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 1-38 in condition for allowance. Applicant submits that the proposed amendments of claims 1, 2, 13 and 33 do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined. Therefore, this Amendment should allow for immediate action by the Examiner.

Furthermore, Applicant respectfully points out that the final action by the Examiner presented some new arguments as to the application of the art against Applicant's invention. It is respectfully submitted that the entering of the Amendment

would allow the Applicant to reply to the final rejections and place the application in condition for allowance.

Finally, applicant submits that the entry of the amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

In view of the foregoing remarks, Applicant submits that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicant therefore requests the entry of this Amendment, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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